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United States Environmental Protection Agency Region 6

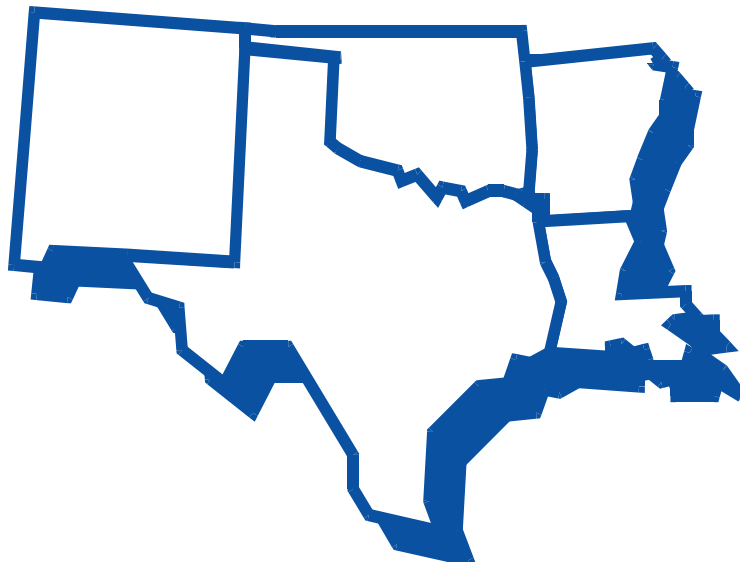
Contract No. EP-W-06-021



Version 1.1
Field Sampling Plan
May 2006

Supplemental Remedial Investigation
State Marine Superfund Site
Port Arthur, Texas

Remedial Action Contract No. EP-W-06-021
Task Order No. 0002-RICO-06BX



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Version 1.1

**Field Sampling Plan
Supplemental Remedial Investigation**

**State Marine Superfund Site
Port Arthur, Jefferson County, Texas**

**Remedial Action Contract No. EP-W-06-021
EPA Task Order No. 0002-RICO-06BX
CH2M HILL Project No. 344479
DCN 0002-0201**

**Prepared for:
U.S. Environmental Protection Agency**

**Prepared by:
CH2M HILL, INC
May 2006**

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Acronym List

ASTM	American Society for Testing and Materials
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BHHRA	Baseline Human Health Risk Assessment
C	Celsius
COC	Chain-of-Custody
DO	Dissolved Oxygen
DQO	Data Quality Objective
DRO	Diesel Range Organic
EPA	U.S. Environmental Protection Agency
FAR	Federal Acquisition Regulation
FFS	Focused Feasibility Study
FS	Feasibility Study
FSP	Field Sampling Plan
FTL	Field Team Leader
GPS	Global Positioning System
GRO	Gasoline Range Organic
HRS	Hazard Ranking System
HSA	Hollow Stem Auger
HSP	Health and Safety Plan
ID	Identification
IDW	investigation-derived waste
LOEC	Lowest Observed Effect Concentration
NAD83	North American Datum of 1983
NCP	National Contingency Plan
NGVD	National Geodetic Vertical Datum
NOEC	No Observed Effect Concentration
NPL	National Priorities List
NTU	Nephelometric Turbidity Unit
ORP	Oxidation Reduction Potential
PAH	Polynuclear Aromatic Hydrocarbon
PCR	Property Control Representative
PID	Photoionization Detector
PM	Project Manager
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SMP	Site Management Plan

SOP	Standard Operating Procedure
SVOC	Semivolatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbon
TNRCC	Texas Natural Resources Conservation Commission
TOC	Total Organic Carbon
USCS	Unified Soil Classification System
VOC	Volatile Organic Compound

1.0 Introduction

This Field Sampling Plan (FSP) has been prepared for the U.S. Environmental Protection Agency (EPA) in support of the Supplemental Remedial Investigation (RI) activities scheduled for the State Marine Superfund Site.

This FSP includes applicable procedures, forms, and guidelines for the performance of the field activities specified in this plan. This document together with the Quality Assurance Project Plan (QAPP) (CH2M HILL, 2006b) provides the Sampling and Analysis Plan (SAP) for this work. The SAP components will be used in conjunction with the Site Management Plan (SMP) (CH2M HILL, 2006c) and Health and Safety Plan (HSP) (CH2M HILL, 2006d), each provided under a separate cover, to describe the procedures to be used during the performance of the Supplemental RI to the field staff conducting field activities at the site.

1.1 Purpose

This FSP has been prepared to describe the methods and procedures to be used during implementation of the field sampling activities. The objectives for the field investigation and a list of the sampling activities to be conducted in support of these objectives are provided in [Section 3](#).

1.2 FSP Organization

[Section 1](#) of this plan is the introduction. [Section 2](#) gives a brief description of the site background. [Section 3](#) describes the field investigation objectives and summarizes the field investigation activities. [Section 4](#) provides a detailed description of the field investigation activities. [Section 5](#) details the decontamination and waste management procedures. [Section 6](#) describes sample handling and analysis. [Section 7](#) lists the procedures for property control and field documentation. [Section 8](#) lists the references used in preparing this document.

1.3 Project Team

A full description of staff and their project responsibilities is presented in the QAPP.

1.4 Project Schedule

The overall project schedule is provided in the Task Order Work Plan (CH2M HILL, 2006a). The field work is scheduled to begin the last week of May 2006 and last for about two weeks.

Refinements to the schedule are likely and will be communicated by the Project Manager (PM) to the field team via project instruction updates.

2.0 Site Background

This section provides a summary of the site background, including a brief history of the site, site description, overview of site topography, and brief discussion of site features. A map of the site is provided in [Figure 1](#).

2.1 Site History

During a routine aerial surveillance of Jefferson County in July 1980, the State Marine Site (Site) was identified as a potentially hazardous waste site. The Site was a barge maintenance and cleaning and salvage facility from 1974 through the early 1980s. Prior to that time, the City of Port Arthur used the Site as a municipal landfill between 1963 and 1974. As a result of subsequent investigations by the Texas Natural Resource Conservation Commission (TNRCC), the Site became a Listed Hazardous Waste Site. Following Texas Water Commission (formerly the Texas Department of Water Resources) scoring efforts in 1987 and later in 1992 using the Hazard Ranking Scoring (HRS) system, the Site was referred to EPA Region 6 because the Site scored a 50.00 under the new HRS, indicating eligibility for listing on the National Priorities List (NPL). The EPA completed two separate HRS efforts, the last of which occurred in 1997. The Site was officially placed on the NPL on August 27, 1998. In June 1998, EPA requested CH2M HILL to conduct a preliminary Remedial RI/FS and prepare a Technical Memorandum. A Remedial Investigation was performed at the site in the autumn of 2001 (CH2M HILL, 2005).

2.2 Site Location and Description

The Site is located on Old Yacht Club Road, Pleasure Islet, within the City of Port Arthur, Jefferson County, Texas. Pleasure Islet is a peninsula located approximately one-half mile southwest of the confluence of the Neches River and Sabine Lake. The approximately 17.2-acre Site consists of tracts 3 and 6 on Old Yacht Club Road. The Sabine-Neches Canal forms the eastern border of the Site. The Site is bordered to the north by Palmer Barge Lines, to the west by Old Yacht Club Road, and to the south by undeveloped land owned by the State Marine property owner.

The Islet is a man-made landmass, consisting of dredge spoils generated during the construction and maintenance of the Sabine-Neches Canal. The canal was constructed between 1898 and

approximately 1920, near Sabine Lake and the Neches River, between the current Site location and the mainland (**Port Arthur Historical Society, 1997**). Pleasure Islet did not exist at the time as the area encompassing the Site was actually part of the northern tip of Pleasure Island. Between 1955 and 1957, a portion of the canal along the western side of Pleasure Islet was abandoned and a new canal cut along the eastern and southern sides of Pleasure Islet. Pleasure Islet was created when a land bridge was constructed across the abandoned portions of the canal, between the northern tip of Pleasure Island and the mainland.

2.3 Topography

Ground elevations range from sea level along the shoreline to a maximum of 11 feet above mean sea level in the north central portions (**Engineer's Office, City of Port Arthur, 1998**). The highest relief on Pleasure Islet is associated with the City of Port Arthur's former municipal landfill, which underlies most of the central and northern portions of the Islet. Onsite, elevations range from approximately 2 to 7 feet above sea level. Drainage on the Islet is toward the adjacent waterways with surface drainage on the State Marine site occurring to the east-southeast.

2.4 Site Features

The understanding of current conditions and Site features is based on aerial photographs, a Site inspection conducted in August 1998, and the 2003 RI (**Weston, 2003**). Vehicle access to the Site is limited to a single dirt road originating at the western Site border along Old Yacht Club Road. Within the Site, dirt roads and trails connect various areas of current or historical operations. Along the shoreline are two sunken barge docks, orientated parallel to and forming part of the shoreline. These two structures are the primary location where barges were moored during cleaning or maintenance. Two additional sunken barges lie perpendicular to the shoreline, as well as a third barge that is oriented parallel to the shoreline. These features are clearly shown on 1998 aerial photographs, as well as older photographs. Dredging of the canal in this area occurs approximately every two years (**Saez, 1998**).

Old marine equipment, including cranes and marine salvage debris, are present on the dock barges and inland areas. Several structures still exist, including a maintenance shed, a former office building, former wastewater treatment facility structures (boiler house, compressor building, and a former pump house), and at least one additional structure of unknown use. Most of these structures are partially collapsed and appear abandoned except for the maintenance shed, which may still be in use. Several aboveground storage tanks and 55-gallon drums sit at the Site. The status of the tanks and

their contents was not investigated during the preliminary inspection (**CH2M HILL, 1999**), although several drums appeared to be partially full. Numerous vehicles, including old cranes, pickup trucks, and several tractors and tractor trailers, are parked at the Site. None of the vehicles looked operational and several appear in various states of salvage or repair. The soil around many of the vehicles is oil stained.

The Site is partially vegetated with native shrubbery and grasses. Much of the Site is overgrown and few structures are recognizable relative to the original operations observed on historical aerial photographs. Fewer than 10-feet of shoreline are exposed at most locations. However, aerial photographs indicate a broader shoreline between the two dock barges, which were not visited during the preliminary inspection. The area is tidally influenced (1 to 2 feet) and the amount of shoreline exposed is likely to vary between tides. During the preliminary inspection, passing ships were observed to generate significant wave action at the shoreline. Based on the wave action and proximity of the canal, it is likely that the shoreline is eroding. Several trees exist and wetland vegetation occurs near or along some areas of the shoreline. Sea gulls were observed roosting on the offshore sunken barges (**CH2M HILL, 1999**).

A detailed discussion of the site investigation history, geology and hydrogeology, and ecological resources are provided in the Final Focused Feasibility Study (FFS) Report. The FFS Report also includes a description of the waste management areas at the site; a summary of the nature and extent of contamination in soil, ground water, and sediment; and summaries of the Baseline Human Health Risk Assessment (BHHRA) and the Baseline Ecological Risk Assessment (BERA) (**CH2M HILL, 2005**).

3.0 Objectives and Overview of Field Activities

This section provides a description of the project objectives and an overview of the planned field activities. The EPA has tasked CH2M HILL to conduct sampling activities in support of the State Marine Supplemental RI. The sampling activities primarily include the collection of soil, sediment, and ground water samples at the Site. Additional unspecified sampling activities (such as surface water) may be performed upon the direction of EPA.

3.1 Project Objectives

The objective of the field investigation activities is to provide supplemental data in support of the State Marine Supplemental RI and BERA. The additional soil and ground water data will be obtained

to determine whether the Former Wastewater Impoundments are a source of contamination to ground water and whether ground water is contaminating the sediments in Sabine Lake. Additional sediment sampling will be performed to collect site-specific data to update the BERA. Samples will be collected from surface sediments of Sabine Lake, which represents the only aquatic habitat that will be evaluated for this site.

3.2 Data Quality Objectives

A detailed discussion of data quality objectives (DQOs) may be found in the QAPP in Section 1.5 and Table 1-2.

3.3 Field Activity Summary

The specific objectives of the field investigation activities stated above will be met by the following field activities:

- Collection of subsurface soil samples from the area of the Former Wastewater Impoundments at the site and offsite laboratory analysis for metals and semivolatile organic compounds (SVOCs)
- Installation of two new monitor wells
- Collection of ground water samples from the two new monitor wells and one existing monitor well at the site and offsite laboratory analysis for metals and SVOCs
- Collection of sediment samples from areas of concern at the site and offsite laboratory analysis for metals, polynuclear aromatic hydrocarbons (PAHs), and Total Organic Carbon (TOC)
- Surveying of the new monitor wells
- Waste management

Specific methods and procedures to be used to obtain this data during implementation of the field activities are provided in the following sections of this FSP.

4.0 Detailed Description of Field Activities

This section provides a detailed description of the field activities to be conducted that are associated with the components of the Supplemental RI described by this FSP, including field investigation

preparations, well installations, soil boring and sampling, ground water sampling, sediment sampling, and field quality control samples.

In general, the sampling procedures discussed below are based upon and follow applicable American Society of Testing and Materials (ASTM) methods. However, some procedures may vary from the ASTM methods where site conditions, applicable safety considerations, or other conditions warrant a change from the standard methods protocol.

A detailed description of laboratory analytical methods to be used can be found in the QAPP in Section 2.4.

4.1 Field Investigation Preparations

This section describes the activities to be completed before field activities begin and the equipment necessary for the sampling effort to be completed.

4.1.1 Field Activity Preparations

The Field Team Leader (FTL) will prepare for field activities, in general, and prepare individual work sites for sampling activities, with the assistance of applicable field staff. These preparations will include:

- Holding a kick-off meeting with field staff to review the site HSP, this FSP, the QAPP, the roles and responsibilities of each team member, work schedules, and conditions potentially triggering work procedure or personal protective equipment changes
- Designating a decontamination station for sampling equipment
- Designating exclusion and contamination-reduction zones
- Inspecting, testing, and calibrating field monitoring instrumentation as specified in the QAPP
- Inventorying all sample bottles to make certain there are sufficient containers on hand for completing the work
- Delineating the sampling locations in the field

4.1.2 Sampling Equipment

Sampling equipment to be used during the investigation includes, but is not limited to, the following:

- Split core barrel sampler
- Ponar[®] or Eckman dredge
- Peristaltic pump with flow-thru cell
- Poly tubing
- Stainless steel bowls and spoons
- Coolers
- Sample collection containers
- Sealing plastic bags, disposable sampling gloves, aluminum foil, and other miscellaneous items

The above-listed equipment will be used to collect soil, ground water, and sediment samples mainly intended for analysis of metals, SVOCs, and TOC.

There are a number of portable field instruments that will be required for measuring ground water field parameters, soil screening, and screening for volatile organic vapors and explosive atmospheres. Anticipated field instruments for specific tasks include the following:

- During any operations, specific health and safety monitoring equipment as specified in the HSP will be required
- During well development and well purging, ground water will be field screened for pH, temperature, specific conductance, dissolved oxygen (DO), turbidity, and oxidation-reduction potential (ORP) using a general water quality parameter instrument

All required equipment will be leased. Calibration solutions and gasses, as well as equipment for performing the calibrations, will be ordered when initially leasing the instruments. Calibration of any field instruments will be in accordance with the equipment manufacturer's specifications and as specified in the QAPP.

4.2 Monitor Well Installations

This section describes the procedures associated with the soil boring and monitor well installation activities.

4.2.1 Access, Siting, Field Activity Preparation, and Work Site Monitoring

Prior to initiation of intrusive activities, boring locations will be finalized in the field and property access and utility clearances will be obtained. In addition, this section addresses calibration of field instruments and workspace monitoring to occur during drilling.

4.2.1.1 Property Access

Specific details of property access limitations and requirements are discussed in the SMP.

Appropriate access arrangements and notifications must be made, even when performing preliminary siting and utility clearance activities.

4.2.1.2 Utility Clearances

Utility clearances and safe operation near utilities are the responsibility of the drilling subcontractor. Specific utility clearance requirements and procedures are provided in the SMP and the HSP.

4.2.1.3 Monitoring of the Work Site

For the safety of onsite personnel working within the exclusion zone, periodic organic and explosive atmosphere monitoring of the work area will be performed while advancing boreholes and constructing wells. Measurements will be performed and documented in accordance with the requirements of the HSP. The Standard Operating Procedures (SOP) in [Appendix A - Field Screening/Air Monitoring with a Photoionization Detector \(PID\)](#) provides additional information on the monitoring equipment and procedures. Most applicable field screening/air monitoring will be conducted with regard to drilling operations.

4.2.2 Well Installations

This section describes the completion of seven soil borings and the installation of two monitor wells that will be installed at the Site to supplement the existing monitor wells. These locations are provided on [Figure 1](#).

Five borings will be completed inside the Former Wastewater Impoundments. Two borings will be completed outside and downgradient of the Former Wastewater Impoundments. Subsurface soil sampling (further described in [Section 4.3](#)) will be performed at each boring location. The anticipated maximum depth drilled at each location will be 20 feet below ground surface (bgs). The drilling will be performed using the Hollow Stem Auger (HSA) method. At the two well locations, a single monitor well will be completed in each boring. Each monitor well will be constructed of

2-inch diameter polyvinyl chloride (PVC) with up to a 10 foot long, 0.010 inch slotted screen. The CH2M HILL field geologist will be responsible for selecting the final placement of the well screen interval at the time of well construction. The sand pack will consist of 20/40 silica sand, placed from the bottom of the boring to 2 feet above the screen. A 2-foot thick seal, composed of hydrated medium bentonite chips, will be placed on top of the sand pack. The remaining annulus will be grouted to surface.

The wells will be completed above ground, with a locking protective metal casing placed in a 3-foot by 3-foot concrete well pad. Four bollards (guard posts) will be placed around the well pad. Permanent identification (ID) markings shall be affixed such that the well ID number is clearly visible. Water level reference points shall also be clearly marked by notching the well casing on the northernmost point. The FTL, or a field staff member designated by the FTL, will be responsible for informing the drilling subcontractor of the appropriate well ID and confirming that permanent ID numbers and water level reference marks have been placed on each completed well.

The drilling subcontract specifications will detail particular well installation details and subcontractor procedures, requirements, and responsibilities. The drilling subcontract terms and conditions will be referred to and take precedence in the case of any conflicting issues encountered. The final well completion details will be recorded on a Monitor Well Construction Diagram ([Appendix B](#)).

4.2.3 Subsurface Soil Logging

Subsurface soils will be logged by CH2M HILL field staff using the Unified Soil Classification System (USCS) visual-manual method ASTM 2488-84 and recorded on a CH2M HILL Soil Boring Log ([Appendix B](#)). During drilling, each borehole will be continuously sampled using a 3.5-inch diameter split core barrel sampler in order to retrieve soil material for lithologic logging purposes. Each section of soil core will also be field screened with a PID to evaluate the presence of volatile organic compound (VOC) contamination.

4.2.4 Well Development

Well development of each monitor well will be conducted to remove sediments that enter the sand pack and well screen during well installation and to induce ground water flow into the well. To allow for proper curing of the grout, well development will not occur until at least 24 hours after the well is installed. Monitor well development will consist of surging and then overpumping the well. Each well will be pumped to remove a minimum of three to five well volumes. All fluids produced during well development will be contained and managed in accordance with the requirements in Section 4 of

the SMP. Details regarding well development procedures will be recorded in the field logbook and on a Well Development Record Form, included in [Appendix B](#).

Water quality parameters will be recorded during development. The parameters include pH, temperature, specific conductance, ORP, DO, and turbidity. Pumping will stop once water quality parameters have been stabilized or a minimum of three well volumes have been removed from the well. Guidelines for stabilization of water quality parameters during development are defined as follows: temperature $\pm 1^{\circ}$ Celsius (C), pH ± 0.1 units, specific conductance ± 3 percent, ORP ± 10 percent, DO ± 10 percent, and turbidity <10 nephelometric turbidity units (NTUs). In the event that <10 NTUs is not achieved, then stabilization shall be achieved when $\pm 10\%$ NTUs is obtained. The time and measurement results for development field parameters shall be recorded as part of the well construction documentation.

4.2.5 Well Surveying

A Texas Registered Public Land Surveyor will survey each new monitor well installed during this project to establish horizontal and vertical controls. Survey specifications will be per those identified in the surveying subcontract. Well casing elevations will be surveyed for elevation to the nearest 0.01-foot using the National Geodetic Vertical Datum (NGVD) and for northing and easting to the nearest 0.1-foot using the Texas State Plane Coordinate System, North American Datum of 1983 (NAD83). The point on the well casing used for surveying will be permanently etched or notched into the northernmost point on the rim of the casing, and a description will be recorded in the field logbook.

The remaining five soil boring locations will be surveyed for horizontal and vertical control using a Global Positioning System (GPS) unit. Horizontal control will be established to submeter accuracy using the Texas State Plane Coordinate System, NAD83. Vertical control will be established to submeter accuracy using the NGVD.

4.3 Soil Sampling

Subsurface soil samples will be collected from each of the seven soil borings. Each boring will be continuously sampled with a 3.5-inch diameter split core barrel. After retrieval of the split core barrel from the borehole, the core barrel will be opened. The soil material will then be field screened using a PID and visually inspected for the presence of contamination. Three subsurface soil samples will be collected from each boring. One sample will be collected from each of the following intervals:

- soils immediately above landfill material (~1-5 feet bgs),
- soils/waste located within the center of landfill material, (~5-15 feet bgs) and,
- soils immediately below landfill material (~15-20 bgs).

The split core barrel sampler will be decontaminated between each use following the procedures described in [Section 5](#).

A depth discrete sample will be collected directly into the appropriate sample containers. Each sample container will then be placed in a Ziploc™ bag and stored on ice. Each sample jar will be marked with the sample ID number and other pertinent information as described in [Section 6](#). During sampling, descriptive details regarding each sample location and the sampling procedures will be recorded in the field logbook in accordance with the requirements presented in [Section 7](#). The soil samples will be shipped to an offsite, subcontracted laboratory for analysis of total metals and SVOCs. The numbers of samples to be collected for each analysis are included in [Table 4-1](#). The laboratory analytical methods are specified in Section 2.4 of the QAPP. New disposable latex or nitrile gloves will be used for each sample collection. Sample containers, volumes, preservation methods, and holding times are discussed in the QAPP in Section 2.3.1 and Table 2-1.

4.4 Ground Water Sampling

Ground water sampling will be performed at the two new monitor wells and one existing monitor well (MW116 B – see [Figure 1](#) for the location). Ground water sampling will occur one week after well development is completed. Each well will be sampled via the low-flow purge method using a peristaltic pump. Disposable sample tubing will be used at each monitor well to reduce the potential to cross-contaminate the samples.

Prior to the ground water sampling, depth-to-water measurements will be recorded at all Site wells (this includes the two new wells, as well as the six existing wells). At each well to be sampled, the sample tubing will be placed at the midpoint of the well screen. The sampler shall start pumping each well at a low flow rate (0.5 liters per minute or less) and slowly increase the speed, checking the water level and maintaining a steady flow rate while minimizing drawdown. A drawdown of no more than 0.5-foot is the goal to help guide the flow rate and may require adjustment based on site-specific conditions.

The following information shall be recorded as the well is purged and sampled: 1) depth to water before, during, and after purging, 2) well volume calculation, 3) total depth of the monitor well, 4) the thickness of any non-aqueous layer(s), and 5) field parameters (measured semi-continuously during purging). Careful, continuous measurement of pH, temperature, specific conductance (or electric

conductivity), DO, turbidity, and ORP will be made using a flow-through cell and Horiba U-22 water quality meter or equivalent. Stabilization of these measurements will be used to identify when the purged water has reached equilibrium. The low-flow method of sampling stipulates that the sample may be collected after the water quality parameters have stabilized. Guidelines for stabilization of water quality parameters during purging are defined as follows: temperature $\pm 1^{\circ}\text{C}$, pH ± 0.1 standard units, EC ± 5 percent, ORP ± 10 mV, turbidity $\pm 10\%$ when the turbidity is greater than 10 NTUs, and DO $\pm 10\%$.

Deviations from expected observations will be documented in the field notes. Ground water sampling measurements, including water quality parameters, water levels, and flow rates, will be recorded on Well Purge and Sampling Field Data Sheets (included in [Appendix B](#)). Water removed from the well during purging shall be handled according to [Section 5.2](#) and Section 3 of the SMP.

The ground water sample will be collected directly into the appropriate sample containers. The sample tubing will be removed from the flow-thru cell prior to sample collection, and the sample will be collected directly from the tubing as it discharges after the pump. Each sample container will be placed in a ZiplocTM bag and stored on ice. Each sample container will be marked with the sample ID number and other pertinent information as described in [Section 6](#). The samples will be shipped to an offsite, subcontracted laboratory for analysis of total metals, dissolved metals, and SVOCs. Dissolved metals samples will be field filtered using a 0.45-micron filter. The numbers of samples to be collected for each analysis are included in [Table 4-1](#). The laboratory analytical methods are specified in Section 2.4 of the QAPP.

During sampling, descriptive details regarding each sample location and the sampling procedures will be recorded in the field logbook in accordance with the requirements presented in [Section 7](#). New disposable latex or nitrile gloves will be used for each sample collection. Sample containers, volumes, preservation methods, and holding times are discussed in the QAPP in Section 2.3.1 and Table 2-1.

4.5 Sediment Sampling

Aquatic ecosystem investigation activities will include collection of field data and collection and chemical analysis of surface sediments. Chemical analysis will include PAHs, TOC, and metals. Surface water field measurements will also be collected for DO, pH, temperature, specific conductivity, turbidity, and ORP.

Additional sediment samples will be collected for potential bioassay testing and taxonomic identification pending the results of chemical analysis and subsequent data validation, evaluation, and interpretation. Qualitative and semi-quantitative parameters will also be assessed, including field parameters, indices of biological integrity, and habitat quality.

Sediment and qualitative data will be collected from each of eight targeted areas within Sabine Lake using either a petite Ponar[®] or petite Eckman dredge sampling device. Sediment samples to be used for chemistry analysis, bioassays, and taxonomic identification will be collected according to standard methods (**EPA, 2001**). The exact device used at each location will be recorded in the field logbook and on the field data sheets. Within each target area, two to five grab samples will be collected to complete one composite sample for analysis. The proposed sample locations adjacent to the site are shown in **Figure 1**. Sample spacing may be adjusted in the field at the time of collection, based on habitat observations, presence of visual contamination, or obstacles. The exact locations of all media samples will be recorded with a GPS unit. A sample from an offsite location within Sabine Lake will serve as a background location that will be used for comparison during data analysis. The selected location will be the same as was used for the Calcasieu Estuary Ecological Risk Assessment (**MacDonald Environmental Sciences Ltd., 2002**).

Sediment samples from each location, collected within the top 6 inches, will be analyzed for SVOCs, PAHs, barium, copper, lead, manganese, nickel, selenium, zinc, grain size, and TOC, with the intent of comparing the results to screening criteria. If a sample result exceeds screening criteria, that data will be evaluated to determine the correlation between concentrations of these parameters and results of bioassays and community structure analysis. General water quality parameters will be collected at the time of sampling from each site and will include DO, temperature, pH, specific conductance, turbidity, and ORP. The numbers of samples to be collected for each analysis are included in **Table 4-1**. The laboratory analytical methods are specified in Section 2-4 of the QAPP.

During sampling, descriptive details regarding each sample location and the sampling procedures will be recorded in the field logbook in accordance with the requirements presented in **Section 7**. New disposable latex or nitrile gloves will be used for each sample collection. Sample containers, volumes, preservation methods, and holding times are discussed in the QAPP in Section 2.3.1 and Table 2-1.

While samples are being collected for chemical analysis, additional sample volume will be collected to use for conducting bioassays and community structure analysis. Sufficient sample volume will be archived for performing 10-day chronic screening bioassays using the marine amphipod *Leptocheirus*

plumulosus. Performance of the bioassay will be dependent upon results of the comparison of analytical chemistry results with screening benchmarks. If the bioassays are performed, the laboratory will identify the No Observed Effect Concentration (NOEC) and Lowest Observed Effect Concentration (LOEC), if present, for each sample, according to standard statistical procedures. Additional volume will also be sieved in the field and then archived for performing taxonomic identification of benthic invertebrates, again pending the results of comparison of analytical chemistry and screening benchmarks. Bioassays and taxonomic identification may be performed on all archived sediments or a subset representing a range of associated chemical concentrations. This decision will be made by the ecological risk assessors for the site and the risk managers based upon the interpretation of the comparison of analytical data to screening benchmarks. Samples for taxonomic identification will be sieved according to standard methods (EPA, 2001). Invertebrates will be preserved in the field in 10 percent formalin and sent to a laboratory experienced in taxonomy of benthic organisms for enumeration and identification to the lowest taxonomic level possible, according to standard methods described in (Barbour et al., 1999). Data derived from taxonomic analyses will be used to calculate a benthic macroinvertebrate IBI or other appropriate macroinvertebrate indices to be determined during data interpretation.

Representative photographs will be taken of all sampling locations, all sediment samples, and all invertebrate samples collected. Sample collection information will be recorded in the field logbook in accordance with the requirements presented in [Section 7](#).

If performed, the bioassays and taxonomic identification data will be used in conjunction with field parameters, field notes, and chemistry data as part of a weight of evidence evaluation to assess ecological risk identified in the BERA (CH2M HILL, 2005).

4.6 Investigation-Derived Waste Sample Collection and Analysis

IDW generated during the field activities will be containerized in 55-gallon drums and stored at a central location at the site. After completion of the field investigation activities, the IDW will be sampled to characterize the wastes for disposal purposes. A single composite sample will be collected from the soil cuttings and a single composite sample will be collected from the liquids (well development and purge water, decontamination fluids).

Each sample will be composited and then collected directly into the appropriate sample containers. Each sample container will be placed in a Ziploc™ bag and stored on ice. Each sample container will be marked with the sample ID number and other pertinent information as described in [Section 6](#). The

samples will be shipped to an offsite, subcontracted laboratory. The soil cuttings sample will be submitted for analysis of Toxicity Characteristic Leaching Procedure (TCLP) VOCs, TLCP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals, and Total Petroleum Hydrocarbons, Gasoline Range and Diesel Range Organics (TPH-GRO and TPH-DRO). The liquid sample will be submitted for analysis of VOCs, SVOCs, pesticides, herbicides, metals, TPH-GRO, and TPH-DRO. The numbers of samples to be collected for each analysis are included in [Table 4-1](#). The laboratory analytical methods are specified in Section 2-4 of the QAPP. Sample containers, volumes, preservation methods, and holding times are discussed in the QAPP in Section 2.3.1 and Table 2-1.

4.7 Field Quality Control Sample Collection and Analysis

Quality Assurance/Quality Control (QA/QC) samples to be collected during the Supplemental RI sampling event, as well as laboratory QA/QC requirements, are described in Section 2.5.1 of the QAPP. QA/QC samples to be taken in the field include Field Duplicates, Field Blanks, Equipment Rinsate Blanks, and Matrix Spike/Matrix Spike Duplicates.

4.8 Other Sampling

As directed by EPA, CH2M HILL may collect additional samples associated with the State Marine Superfund Site. These samples may include surface water or other media, as requested. If necessary, this FSP and the associated QAPP will be revised to address sampling activities and methodologies not addressed in this version of the SAP.

5.0 Decontamination and Waste Management Procedures

The following paragraphs discuss and describe decontamination and waste management procedures. To ensure that samples are not cross-contaminated, equipment used during the sampling event must be cleaned following appropriate decontamination procedures. Waste generated from the sampling activities must be disposed in an appropriate manner whether it is classified as hazardous or non-hazardous waste. Additional procedures are also included in Sections 3 and 4 in the SMP.

5.1 Decontamination Procedures

To prevent cross-contamination of soils, sediments, or ground water, all drilling, well development, and sampling equipment must be decontaminated prior to the start of project work and between work at individual sampling locations.

The decontamination procedures that will be followed shall be in accordance with approved QAPP procedures. All equipment that contacts potentially contaminated soil, sediment, or water will be decontaminated. Disposable equipment intended for one time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of equipment in a designated decontamination area. It is anticipated that a dedicated temporary decontamination pad will be constructed for the decontamination of large drilling equipment at a location that has not yet been determined.

All decontamination fluids need to be contained and disposed in accordance with the waste management procedures detailed in Section 3 of the SMP and [Section 5.2](#) of this plan.

The following decontamination procedure shall be followed for the drilling equipment:

Drilling Equipment

- Decontaminate all drilling equipment (auger flights) using a high-pressure spray washer
- Wash the exterior surfaces thoroughly using wash water containing a non-phosphate soap (Alconox or similar),
- Use clean tap water to rinse soapy water from the equipment

Equipment will be decontaminated in a designated area. The core barrel sampler will be decontaminated at each boring location between each use. Clean bulky equipment shall be stored on plastic sheeting in uncontaminated areas. Materials to be stored more than a few hours will be covered.

The following decontamination procedure will be used to decontaminate non-dedicated reusable devices (such as core barrel samplers, dredges, stainless steel trowels, and bowls):

Field Equipment

- Scrub equipment with brushes with an Alconox and potable water wash and rinse with a solution of potable water until all visible signs of dirt are removed
- Follow by additional rinsing with diluted nitric acid and a final rinse of distilled water
- Allow equipment to air dry and prevent exposure to potentially contaminating substances

Following decontamination, clean sampling equipment and utensils will be placed into plastic bags or wrapped in aluminum foil to protect the equipment from contamination prior to use.

5.2 Waste Management

All waste generated at the Site will need to be contained and shipped offsite for disposal. The final disposal destination for all wastes is to be determined. Soil cuttings and fluids will be sampled and characterized for disposal purposes. Waste disposal will require coordination with a waste disposal subcontractor. CH2M HILL will assist the subcontractor in making appropriate arrangements and procuring necessary approvals.

The National Contingency Plan (NCP) requires that waste be managed to comply with applicable or relevant and appropriate requirements to the extent practicable. Waste management procedures are specified in the SMP.

The IDW generated during the investigation will consist of used consumable goods (such as gloves and paper towels), soil cuttings, well development and purge water, and decontamination wastewater. All IDW will be placed in 55-gallon drums. These materials will be stored onsite pending analysis. Once analytical results are received, the IDW will be disposed at an appropriate offsite facility. It is anticipated that all IDW will be disposed as a non-hazardous waste.

One composite sample will be taken of the drill cuttings and one composite sample will be taken of the liquids, and sent offsite to a laboratory for analysis and characterization as specified in [Section 4.6](#). IDW generated during the field investigation will be managed according to the procedures listed above and in Section 3 of the SMP.

6.0 Sample Identification

This section describes the procedures for the identification of samples. Sample labeling, documentation, and data management requirements are discussed in the QAPP.

6.1 Soil and Ground Water Sample Identification

Soil and ground water samples collected during the Supplemental RI will be identified with the following labeling scheme:

Station ID-Media-Sample#-MMDDYY

Where:

Station ID represents the boring or monitor well ID number. The station IDs for the boring numbers will be continued based on the order used during the RI in 2001. The last RI boring number was SM135. The first boring completed during this investigation will be SM136, and the boring numbers will increase sequentially. For monitor wells, 'MW' will replace 'SM' in the station ID. For waste samples, 'IW' will be used as the station ID.

Media is two letters designating the sample media type based on the following conventions:

- Subsurface soil (SB)
- Ground water (GW)
- Field Duplicate (FD)
- Equipment Rinsate Blank (EB)
- Field Blank (FB)
- Matrix Spike/Matrix Spike Duplicate (MS)

Sample# is two numbers identifying the sample number at a specific location:

- Number 01, 02, etc. Use leading zeros.

MMDDYY corresponds to the month, day, and year of sample collection.

Sample labels will also show the date and time of collection, the analysis requested, and the preservation method.

Any additional abbreviations created in the field will be explained in the field logbook.

6.2 Sediment Sample Identification

Sediment samples collected during the Supplemental RI will be identified with the following labeling scheme:

Area-Media-Sample#-MMDDYY

Where:

Area is the 1-character location abbreviation.

- Preliminary remediation goal exceedance areas from the BERA are labeled A through I.

Media is two letters designating sample media type.

- Sediment (SD)

Sample# is two numbers identifying the sample number.

- Number 01, 02, etc. Use leading zeros.

MMDDYY corresponds to the month, day, and year of sample collection.

Sample labels will also show the date and time of collection, the analysis request, and the preservation method.

Any additional abbreviations created in the field will be explained in the field logbook.

7.0 Property Control and Field Documentation

This section describes the procedures for property control (for consumables and equipment) and field documentation.

7.1 Property Control

Property procured in support of the field activities described by this FSP (consumables and equipment) will be managed as appropriate in accordance with the Federal Acquisition Regulation (FAR). CH2M HILL has prepared guidelines for property control on government contracts; these guidelines are provided as [Appendix C](#). The assigned CH2M HILL property control representative (PCR) will use these management guidelines to track the cost, purchase, receipt, and maintenance of all government-owned and leased material acquired during the project. The PCR will provide regular updates to the PM regarding the status of government property and will communicate as needed with CH2M HILL's corporate government property administration.

7.2 Field Documentation

This section describes the procedures for maintaining field logbooks, documenting sample collection, and preparing daily reports during the fieldwork described by this FSP.

7.2.1 Field Logbooks

Bound field logbooks with sequentially numbered pages will be maintained by the FTL and other team members to provide a daily record of significant events, observations, and measurements made during sampling and well installation activities. All information pertinent to these activities will be recorded in the logbooks. All entries will be signed and dated on each page and must include at least the following information:

- Name and title of author, date and time of entry and exit, and weather/environmental conditions during the field activity
- Location of sampling or well installation activity
- Name and title of field crew members
- Name and title of site visitors
- Sample media
- Sample collection method
- Number and volume of sample(s) taken
- Well development information
- Dates and times of specific activities (such as sample collection, health and safety tailgate meetings, and lunch breaks) performed
- Sample ID number(s)
- Sample descriptions (such as depth the sample was taken from or the source of the sample) and ID of conditions that might affect the representativeness of a sample (such as broken or damaged equipment)
- Sample distribution (for example, which laboratory the sample was sent to for analysis)
- Field observations
- Field equipment model numbers, serial numbers, and calibration results
- Field measurements, including units (such as depth to water data)
- Description of photographs taken

- Problems encountered/unusual conditions and means of resolution
- All sample documents, such as:
 - ❑ Bottle lot numbers
 - ❑ Dates and method of sample shipments
 - ❑ Chain-of-Custody (COC) forms
 - ❑ Sample handling (preservation) methods

All original data recorded in field logbooks, sample labels, and COC forms will be written with waterproof, black, indelible ink. None of these accountable documents is to be destroyed or thrown away, even if one is illegible or contains inaccuracies requiring document replacement. If an error is made on an accountable document assigned to one individual, that individual should make all corrections simply by crossing a line through the error, initialing and dating the correction, and entering the correct information. The erroneous information should not be obliterated. Any subsequent error discovered on an accountable document should be corrected by the person who made the entry. All subsequent corrections will be initialed and dated. For subsequent information on field sampling documentation, refer to Section 1.7.1 of the QAPP.

7.2.2 Field Sampling Forms

The following field sampling forms will be used during the field investigation are included in [Appendix B](#):

- Soil Boring Log
- Field Sampling Report Form
- Well Completion Diagram
- Well Development Log
- Well Purge and Sampling Field Data Sheet

7.2.3 Daily Reports

Daily reports will be made by the FTL to the PM, or a team member designated by the PM, via email communication.

7.3 Photographs

Photographs should be taken, as needed, to document daily activities and notable events such as health and safety issues, site conditions, and decontamination procedures. Electronic versions of the photographs will be stored on a secure CH2M HILL server with an appropriate directory structure for identifying and documenting photographs. When a photograph is taken, the following information will be written in the logbook:

- Time, date, location, direction facing, and, if appropriate, weather conditions
- Description of the subject photographed
- Name of the person taking the photograph.

7.4 Chain of Custody Records

COC record requirements are detailed in Section 2.3.2 of the QAPP.

COCs are used to document sample collection and shipment to an offsite laboratory for analysis. They track the custody of the sample from the time of collection through transport, sample receipt, preparation, analysis and storage, data generation and reporting, and sample disposal. All sample shipments will be accompanied by a COC record. Form(s) will be completed and sent with the samples for each shipment and laboratory.

7.5 Packaging and Shipment Documentation

Sample packaging and shipping requirements are detailed in Section 2.3.2 of the QAPP. A diagram showing proper labeling of sample coolers can be found in Figure 2-1 of the QAPP. Documentation of shipping documents (for example airbills or invoices) shall be retained in the general project files.

8.0 References

- Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. *Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition*. EPA 841-B-99-002. U.S. Environmental Protection Agency; Office of Water; Washington, D.C.
- CH2M HILL, 1999. *Response Action Contract, EPA Region 6, Technical Memorandum, State Marine Superfund Site*. March 19, 1999.
- CH2M HILL, 2005. *Final Focused Feasibility Study Report, State Marine Superfund Site*. EPA. September 2005.

- CH2M HILL, 2006a. *Work Plan, State Marine, Supplemental Remedial Investigation/Feasibility Study*. March 27, 2006.
- CH2M HILL, 2006b. *Quality Assurance Project Plan, Supplemental Remedial Investigation, State Marine Superfund Site, Port Arthur, Texas*. Version 1.1. May 2006.
- CH2M HILL, 2006c. *Site Management Plan, Supplemental Remedial Investigation, State Marine Superfund Site, Port Arthur, Texas*. Version 1.0. April 2006.
- CH2M HILL, 2006d. *Health and Safety Plan, Supplemental Remedial Investigation, State Marine Superfund Site, Port Arthur, Texas*. Version 1.0. April 2006.
- Engineer's Office, City of Port Arthur, 1998. Untitled 24 X 36 topographic map for Pleasure Islet and vicinity overlaid onto post-1974 aerial photograph. 1998.
- MacDonald Environmental Sciences Ltd., 2002. *Calcasieu Estuary Remedial Investigation/Feasibility Study (RI/FS): Baseline Ecological Risk Assessment (BERA)*. CONTRACT NO. 68-W5-0022. DOCUMENT CONTROL NO. 3282-941-RTZ-RISKZ-14858.
- Port Arthur Historical Society, 1997. *Port Arthur Centennial History (1898-1998), A Pictorial History of Port Arthur, Texas*. Looking Glass Media. 1997-1998.
- Saez, Louise, U.S. Army Corps of Engineers, Galveston, Texas (Saez), 1998. Telephone conversation with P. van Noort. October 13, 1998.
- United States Environmental Protection Agency (EPA). 2001. *Methods for Collection, Storage, and Manipulation of Sediments for Chemical and Toxicological Analyses: Technical Manual*. EPA/823/B-01/002. Office of Water, U.S. Environmental Protection Agency, Washington, D.C.
- Weston Solutions Inc. (Weston), 2003. *Remedial Investigation Report, State Marine Superfund Site, Port Arthur, Jefferson County, Texas*. EPA. April 2003.

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Table 4-1

Sample Frequency by Method
State Marine Superfund Site
Port Arthur, Texas

Analyte/Method	Normal Samples	Field Duplicates	Equipment Blanks	Field Blanks	MS/MSD	Total
<i>Existing and new ground water monitor well sampling</i>						
SVOCs	3	1	1	1	1	7
Total Metals	3	1	1	1	1	7
Dissolved Metals	3	1	1	1	1	7
<i>Subsurface Soil</i>						
SVOCs	21	3	1	1	2	28
Metals	21	3	1	1	2	28
<i>Sediments</i>						
PAHs	9	1	1	0	1	12
Metals	9	1	1	0	1	12
Grain Size	9	1	0	0	0	10
TOC	9	1	0	0	0	10
<i>Investigation Derived Wastes ¹</i>						
TCLP - VOCs	2	0	0	0	0	2
TCLP - SVOCs	2	0	0	0	0	2
TCLP - Pesticides	2	0	0	0	0	2
TCLP - Herbicides	2	0	0	0	0	2
TCLP - Metals	2	0	0	0	0	2
TPH - GRO	2	0	0	0	0	2
TPH - DRO	2	0	0	0	0	2

NOTES:

MS/MSD - matrix spike/matrix spike duplicate

SVOCs - semivolatile organic compounds

TOC - total organic carbon

TCLP - toxicity characteristic leaching procedure

VOCs - volatile organic compounds

PAHs - polycyclic aromatic hydrocarbons

TPH - total petroleum hydrocarbons

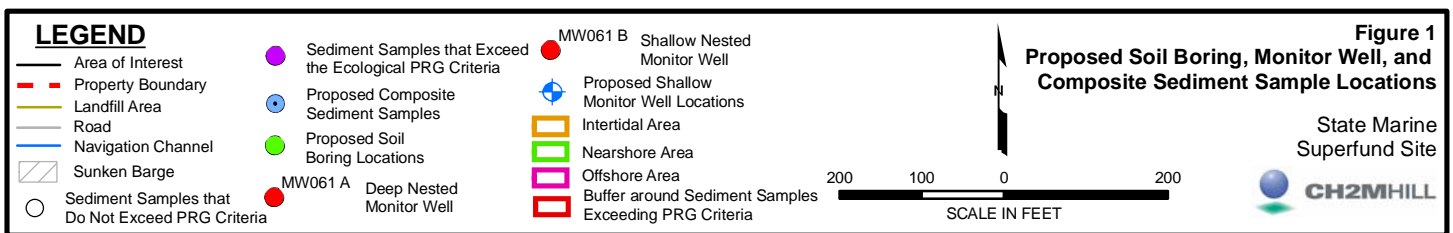
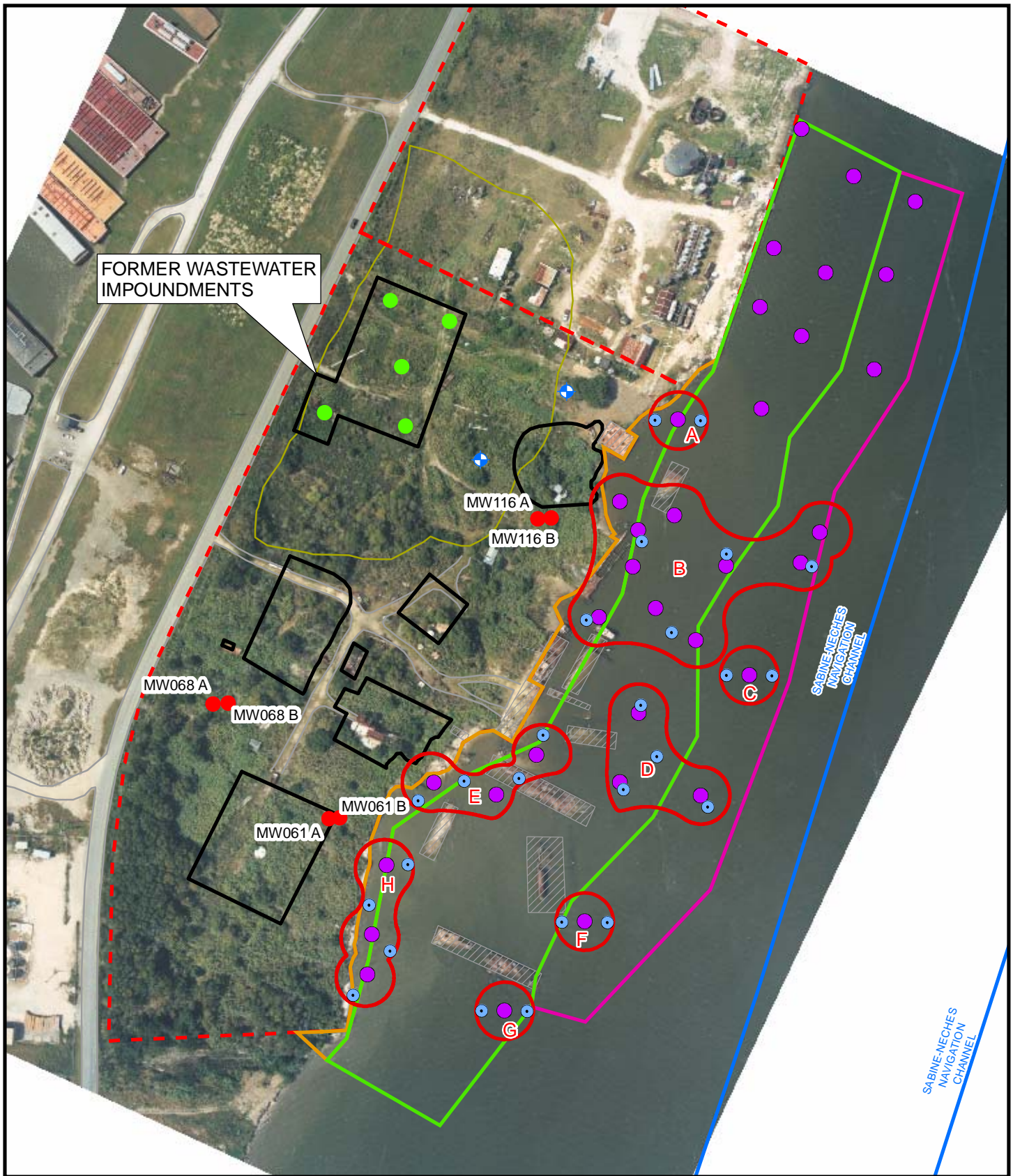
GRO - Gasoline Range Organics

DRO - Diesel Range Organics

1 - A single composite sample will be collected from each of the solid and liquid investigation-derived wastes.

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Appendix A

Field Screening/Air Monitoring with a PID

Purpose

This technical practice provides general guidelines for calibration and use of a PID field screening and air monitoring device.

Scope and Applicability

This technical practice provides a broad guideline for the field use of a PID. The PID is configured to measure volatile organic carbon compounds (VOC) at a minimum explosive limit. For specific technical instructions, refer to manufacturer's operations and maintenance manual.

Technical Practice Details

Equipment / Materials

- Operations manual
- A PID with fully charged battery pack
- A cylinder of calibration gas
- A regulator for the calibration gas cylinder
- A short length of tubing (as short as possible) to transfer calibration gas from cylinder to PID

Procedures / Guidelines

Only properly trained personnel shall use this instrument. For specific instructions, see operation manual.

Calibrating the PID

Refer to specific instrument instruction manual for proper calibration and calibration check procedures. In general, the following procedure should be followed. This procedure follows the procedure for the MiniRae PID.

1. Push Mode/On button. Unit will say ON and then will go through its diagnostic routine.

2. Let unit warm up for 10 minutes if it has not already.
1. Let unit warm up for 10 minutes if it has not already.
2. Hold the "N/-" key and the "Mode/On" key at the same time for 5 seconds or until the unit shows CALIBRATE MONITOR. Push "Yes."
3. Unit will then ask FRESH AIR CALIBRATION? Push "Yes" and unit will zero itself. Then set the 02 to 20.9.
4. Unit will ask MULTIPLE SENSOR CALIBRATION? Push "Yes."
5. Apply the Quad Gas (02, LEL, H₂S, C). Make sure the valve is on! Push "Yes."
6. Unit will say APPLY GAS and then count down from 40 to 0. Unit will show calibration amounts.
7. Unit will say REMOVE GAS and then go to (SINGLE SENSOR CALIBRATION).
8. Turn off gas valve. Remove Quad Gas and shut the valve. Push "Yes," and then push "Mode/On" once unit it reads VOC.
9. Attach the isobutylene calibration gas, and turn on the valve. Push "Yes."
10. Unit will say APPLY GAS. Then count down from 40 to 0.
11. Unit will say VOC CAL'D and then (REMOVE GAS)
12. Remove isobutylene calibration gas and turn off valve.
13. Push "Mode/On" until the unit returns to the main screen
14. The unit is now calibrated.

Air Monitoring with the PID

Air monitoring data are to be recorded on a field form (e.g., a boring log) or in the field logbook.

The PID can perform four types of air monitoring. The applicability of the air monitoring technique depends on the task.

- **Breathing Zone Monitoring:** The PID can monitor the air in the breathing zone. Monitoring shall be done periodically to ensure that workers are not exposed to potentially hazardous atmospheres or circumstances.
- **Borehole Monitoring:** The PID is to be used monitor the top of a boring to check for potentially hazardous atmospheres. This technique is applicable during monitor well installation, direct push soil sampling, and some hand auguring.
- **Sample Headspace Monitoring:** Headspace monitoring is performed by placing a soil sample in an enclosed space for a set period and then monitoring the space above the sample. Headspace air monitoring can be performed if there is enough soil volume remaining after analytical soil sampling.
To perform an ionizable volatile organic material headspace analysis on a subsurface soil sample, take a PID reading from the headspace of a zip-lock bag containing a representative sample from the split spoon. An aliquot of soil must be immediately placed into a zip-lock bag to minimize loss of VOCs. If collecting a suite of samples use a consistent amount of soil volume in each zip-lock bag, making sure to leave room at the top for the headspace reading and not to compact the soil. After filling the zip-lock bag, immediately seal the bag to prevent the loss of volatiles. Allow volatilization of any compounds into the air space of the bag for 10 minutes in a warm place (>50 °F). Take the reading by breaking the zip-lock bag

seal just enough to insert the probe of the PID, inserting the probe, and recording the result. Discard the soil and bag according to the IDW management plan.

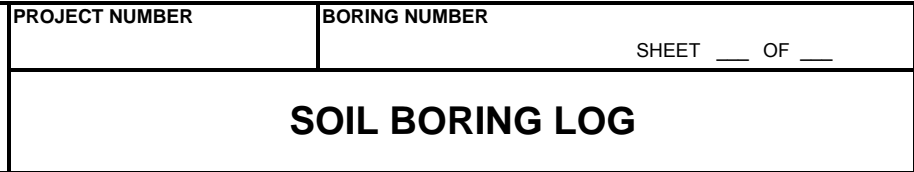
- **Sample Screening:** Sample screening is performed by placing the probe tip of the monitoring instrument near the location to be screened (e.g., a soil sample, water sample, unknown surface). The quality of the screening depends on the wind direction and distance of the monitoring instrument tip from the screened material or surface.

Key Checks / Items

- Check battery.
- Zero and calibrate.
- Verify that sensor probe is working.
- Recharge unit after use.
- Back-up PID available.

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PROJECT :		LOCATION :	
ELEVATION :		DRILLING CONTRACTOR :	
DRILLING METHOD AND EQUIPMENT USED :			
WATER LEVELS :	START:	END:	LOGGER :

[illegible]

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COMMENTS:

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PROJECT NUMBER

WELL NUMBER

SHEET

OF

WELL COMPLETION DIAGRAM

PROJECT :

LOCATION :

ELEVATION :

DRILLING CONTRACTOR :

DRILLING METHOD & EQUIPMENT:

WATER LEVELS :

START :

END :

LOGGER:

1- Ground elevation at well _____

2- Top of casing elevation _____

3- Wellhead/protection cover description _____

4- Diameter/type of surface casing(s)
a) Quantity(s) of surface casing grout used _____

5- Diameter/type of well casing _____

6- Type/slot size of screen _____

7- Type screen filter
a) Quantity used _____ size: _____

8- Type of seal
a) Quantity used _____

9- Grout
a) Grout mix used _____
b) Method of placement _____
c) Quantity of well casing grout _____

10- Development method _____


11- Development time _____

12- Estimated volume of water purged _____


13- Comments: _____

All measurements are from ground surface.

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		PROJECT NUMBER		WELL NUMBER					
		SHEET							
WELL DEVELOPMENT LOG									
PROJECT:				LOCATION:					
START: END:				DEVELOPMENT CONTRACTOR:					
FIELD HYDROGEOLOGIST:				SCREEN INTERVAL:					
				PUMP PLACEMENT:					
				WELL DIAMETER AND MATERIAL:					
TIME	WATER VOLUME DISCHARGED	WATER LEVEL (BTOC)	Ph	TURB. (NTU)	COND. (umhos/cm)	TEMP. (CELSIUS)	DO (mg/L)	ORP	REMARKS (COLOR, ODOR, SHEEN, SEDIMENT, ETC)
EQUIPMENT USED (MAKE, MODEL, SER. No.):									
METHOD USED FOR DEVELOPMENT (i.e. air-lift, overpumping/surging, bailer, etc...):									
TOTAL VOLUME H ₂ O PURGED FROM WELL (GALLONS):									
COMMENTS:									

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		Well Purge and Sampling Field Data Sheet					
		Project #:				Date	
Well Number:		Site: Griggs and Walnut Groundwater Plume Site					
Field Crew:							
Depth to Water (ft):	=		Casing Diameter		gal/ft of casing		
Well Depth (ft.):	-		2 inch		0.01632		
Water Column (ft):	=		4 inch		0.06528		
Gal/ft of Casing:	x		6 inch		1.4688		
Casing Volume (gal)	=		8 inch		2.611		
No. of Volumes (min.	x		10 inch		4.0797		
Purge Volume (gal):	=		12 inch		5.8748		
Method of Purging (circle one)							
PUMP: SUB. CENT. PERIST.		OTHER:			BAILER: TEFLON, SS, OTHER		
TIME ON:					BAILER VOL. (gal):		
FLOW RATE (gpm):					REQUIRED PULLS:		
PUMP TIME (min):					VOL. PURGED (gals):		
VOL. PURGED (gals):					OTHER:		
FIELD PARAMETERS		FIELD MEASUREMENTS				WITHIN 10% Y/N	
		1st	2nd	3rd	4th	5th	6th
TIME							
Depth to Water (ft):							
VOL. (gal):							
FLOW RATE (gpm):							
pH (s. units)							
TEMP. (C)							
D. O. (mg/L)							
Turbidity (NTU)							
REDOX							
ORP							
COND (umohs/cm)							
SAMPLE PARAMETERS (GRAB or COMPOSITE):							
FILTERED METALS COLLECTED: Y / N 1.0um, 0.45um, OTHER:							
Observations							
Color: Clear Other (describe):							
Odor: None Low Medium High Very Strong H2S Fuel-Like							
Turbidity: None Low Medium High							
COMMENTS:							
OTHER: PLEASE USE BACK OF SHEET FOR SKETCHING MAPS, NOTES, ETC. SEE BACK OF SHEET Y / N							
QC SAMPLE TYPE:		DUPLICATE		EQUIPEMENT BLANK		OTHER	
QC PARAMETERS:							
SAMPLE DATE/TIME:							
Signed/Sampler:							

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**PROPERTY CONTROL
REPRESENTATIVE (PCR)
DESKTOP OPERATING
INSTRUCTIONS (DOI)
(EPA Programs)
AND
ISSUE AND RECEIPT
DOCUMENTS FOR
GOVERNMENT OWNED
MATERIALS AND EQUIPMENT**

Revision C Approval

Thomas M. Feely

Date

7/6/98



The following Property Management package contains instructions that have been derived from CH2M Hill's Government Property Management Manual, and will aid individuals to function as a Property Control Representative (PCR). This package contains Desktop Operating Instructions (DOI) for EPA Programs, in the receiving and issuance of government owned material and management of government owned equipment. It also provides copies of all forms that are required to receive, issue and maintain inventories of government owned material and equipment.

In the event that questions or problems arise, please contact the Corporate Property Administrator at (720) 286-2278 or the undersigned at (720) 286-2442.

Tom Tschudy
Property/Asset Manager



TABLE OF CONTENTS

Page Number	Document Title	Document Number	Current Revision Level	Current Revision Date
i	Title Page	PropMgt 001	C	6/15/98
ii	Cover Letter	PropMgt 002	D	12/07/04
iii	Table of Contents	PropMgt 003	D	12/07/04
1	Desk Operating Instructions (DOI) for Government Material (EPA Programs)	PropMgt 004	D	12/07/04
4	Desk Operating Instructions (DOI) for Government Equipment (EPA Programs)	PropMgt 005	D	12/07/04
7	Receiving Report (RR) Form	PropMgt 006	D	12/07/04
8	Consumable Stock Record Log (CSRL) CAP	PropMgt 007A	C	6/15/98
9	Consumable Stock Record Log (CSRL) GFP	PropMgt 007B	C	6/15/98
10	Expendable Stock Record Log (ESRL) CAP	PropMgt 008A	C	6/15/98
11	Expendable Stock Record Log (ESRL) GFP	PropMgt 008B	C	6/15/98
12	PMARS Data Entry Sheet	PropMgt 009	C	6/15/98
13	Material and Equipment Flow Chart	PropMgt 010	D	12/07/04
14	PCR Certificate	PropMgt 011	C	6/15/98
15	Physical Inventory Log	PropMgt 012	D	12/07/04
16	Attachment A – Form Examples	N/A	N/A	N/A



Control of Government Owned Material **EPA Cost Reimbursement Contracts**

DOI

(Desk Operating Instructions)

This DOI is a condensed set of EPA contract specific instructions derived from the CH2M HILL Government Property Management Manual for the accountability of Federal Government owned material acquired as a direct charge to Cost Reimbursement type contracts. Government owned material must only be used for the work assignment for which it was acquired, unless transfer of costs and written authorization to use on other work assignments or contracts is granted by the Contracting Officer or specified in the Work Assignment or contract. This specific DOI details material control from receiving to maintaining and issuance of government owned material. It is vital that all company employees understand the importance of keeping accurate receiving and inventory records. Failure to maintain records of government-owned property, which are the official government records both on-site and at company offices, is in violation of Contract provisions. An unsatisfactory Property Control rating will result in reduced profits on award fee contracts, liability for all government property, as well as the inability to obtain future work.

Definitions:

Consumable Material: Consumable, non-reusable items, or items incorporated into end-items (e.g. monitoring systems, pumps, etc.), that will be purchased on a continuing basis (e.g., plastic bottles, rubber gloves, packing boxes, purchased parts, assemblies, components, pumps, paper, nuts, bolts, etc.)

Expendable Material: Reusable items, that are purchased on a periodic basis as the items wear out (e.g., hammers, pliers, manual screwdrivers, flashlights, wire brushes, tool boxes, etc.)

Contractor Acquired Property (CAP): Property that is purchased by the contractor and charged direct to a cost reimbursable type contract, which in turn becomes Government property.

Government Furnished Property (GFP): Government owned property that is provided to the contractor by the government.

Property Control Representative (PCR): The individual assigned by the Program or Project Manager who is responsible on-site for the management and control of property, both equipment and materials. The PCR coordinates activities with the CH2M HILL Property Manager and assigned Contract Administrator.

Note: This DOI does not pertain to government owned equipment. The process for the control of equipment is addressed in a separate DOI.

Section 1: Receiving Material

- A. The Property Control Representative (PCR) will be responsible for recording **all received government owned material** on the CH2M HILL Receiving Report (RR) (see page 7 of the DOI). The PCR will coordinate all receiving activity for his/her responsible work assignment.
- B. Upon receipt of government owned material on site, the PCR will examine all applicable paper work, ensure quantities received match, inspect for damage, determine if CAP or GFP, assign and physically store the stock material to the appropriate Work Assignment (WA) storage area. In the event that materials are received at a remote location or field site, the

receiver (if not the PCR) will inform the PCR of the acquisition and ensure that the PCR is provided with all applicable paper work. The PCR is responsible for capturing all receiving data for his/her WA (this will include controlling receipts at all WA site locations.) The PCR must coordinate with project management and project accounting to ensure that every item purchased or furnished is recorded on a RR. Keep in mind that property may be acquired via purchase order, expense report, check request, local agreement, national agreement, etc. All property must be accounted for on a RR.

Note: All government owned stock material must be segregated and identified by individual WAs and stored in a designated storage area. Additionally, CH2M HILL owned or other contract material must be segregated from government owned material. Do not co-mingle material.

- C. The PCR will **insure** that all stocked material is physically placed in the designated WA storage area.
- D. The PCR will utilize a Receipt and Issue (RI) process for consumable material that will be issued to the field within forty-five (45) days of acquisition. The RI record will consist of a completed RR and the associated vendor invoice and/or receipt. All consumable materials retained in stock longer than forty-five (45) days will be logged on a Consumable Stock Record Log (CSRL (CAP)/CSRL (GFP)). All Expendable Material will be logged on an Expendable Stock Record Log (ESRL(CAP)/ESRL(GFP)) as required . When relevant, the CSRL must be located with or near where property is stored. All storage bins, boxes, and shelves will be appropriately identified with ownership (i.e. Property of USEPA,) Contract Number and Work Assignment Number.
- E. All government owned expendable material will be permanently identified with the appropriate ownership. Permanent ownership identification will be applied by using indelible ink, paint pen, scribing or etching as conditions dictate.
- F. The PCR will maintain a file of all applicable paperwork, copies of acquisition invoices and receipts, RRs, CSRLs and ESRLs on site for audit purposes.
- G. The PCR will forward copies of all RRs, current CSRLs, ESRLs and associated vendor invoices and/or receipts monthly to the CH2M HILL Property Administrator as applicable.

Section 2: Distributing and Maintaining Material

- A. The PCR will ensure that there is no co-mingling of stock material between WAs or between government property and CH2M HILL owned or other client contract property.
- B. The PCR may establish Minimum and Maximum (Min/Max) usage of government owned consumable stock material for each WA and record it on the CSRL.
- C. Users will log the quantity issued and acknowledge receipt of all consumable government owned stock materials taken by them from storage on the CSRL as applicable..
- D. Expendable property items are not required to be recorded as issued each time those items are used (e.g. Hammers are recorded as received only once on an ESRL until final disposition.)
- E. The PCR will maintain an accurate inventory of government owned stock material and ensure that the CSRLs and ESRLs are up-to-date. **Note: All consumable government owned stock material held in inventory longer than forty-five (45) days must be shown as received and issued on the CSRL.**
- F. The PCR will maintain a file of the completed CSRLs and ESRLs on site for audit purposes.

- G. The PCR will forward copies of all updated and completed CSRLs and ESRLs monthly to the Corporate Property Administrator as applicable.
- H. In the event of material Loss, Damage or Destruction (LDD), the PCR will notify the Corporate Property Administrator as soon as possible after discovery of the loss or damage.



Control of Government Owned Equipment
EPA Cost Reimbursement Contracts
DOI
(Desk Operating Instructions)

This DOI is a condensed set of EPA contract specific instructions derived from the CH2M HILL Government Property Management Manual for the accountability of Federal Government owned equipment acquired as a direct charge to all Federal Government contracts. All government equipment must be identified in the contract or authorized in writing prior to acquisition by the government Contracting Officer. Equipment must only be used on the contract to which it is accountable unless "Right-to-Use" on other government contracts is authorized by the contracting officer in writing or is stated in the contract. This specific DOI details government equipment control from receipt to final disposition. It is vital that all company employees understand the importance of keeping accurate receiving and inventory records. Failure to maintain records of government-owned property, which are the official government records both on-site and at company offices is in violation of Contract provisions. An unsatisfactory Property Control rating by our client will result in reduced profits on award fee contract, liability for all government property, as well as the inability to obtain future work.

Definitions:

Equipment: Personal property, as authorized in the contract, that is commercially available (including test equipment, machine tools, furniture, and vehicles,) which is purchased or furnished for use in performing services, manufacturing supplies, or for any administrative or general use. Government equipment may either be contractor acquired (CAP) or government furnished (GFP) property (not including Leased or Rented equipment).

Contractor Acquired Property (CAP): Property that is purchased by the contractor and charged direct to a cost reimbursable type contract, which in turn becomes Government property.

Government Furnished Property (GFP): Government owned property that is provided to the contractor by the Government.

Property Control Representative (PCR): The individual assigned by the Project Manager who is responsible on-site for the management and control of property both equipment and materials. The PCR coordinates activities with the CH2M HILL Property Manager and Contract Administrator.

PMARS: The CH2M Hill "Property Management Accountability Records System" for the control of all Government and Company owned equipment.

Leased/Rental Equipment: Equipment that is leased or rented, the costs being a direct charge to the client, is **not** considered government property. However, it is extremely important that these items are used only on the contract Work Assignment for which they are obtained. Non-adherence to this stipulation is a misappropriation of U.S. Government funds and is in direct violation of our contract.

Note: This DOI does not pertain to government owned material. The process for the control of material will be addressed in a separate DOI.

Section 1: Receiving Equipment

- A. The PCR will be responsible for recording all received equipment on the CH2M HILL Receiving Report (RR). **Note: All newly acquired government owned equipment must be tagged with the appropriate Property Identification Tag. (e.g. U.S. EPA owned tag.) CH2M HILL owned equipment is tagged with CH2M HILL ownership tags.**
- B. Upon the receipt of government owned equipment on site, the PCR will examine all applicable paper work, insure quantities received match, inspect for damage and serviceability, determine if CAP or GFP assign and physically store the equipment in the appropriate Work Assignment (WA) storage area. In the event that equipment is received at a remote location or field site, the receiver (if not the PCR) will inform the PCR of the acquisition and ensure the PCR is provided with all applicable paperwork. The PCR is responsible for capturing all receiving data for his/her WA (this will include controlling receipts at all WA site locations.) The PCR must coordinate with project management and project accounting to ensure that every item purchased or furnished is recorded on an RR. Keep in mind that property may be acquired via purchase order, expense report, check request, local agreement, national agreement, etc. All property must be accounted for on an RR.
- C. Equipment Identification:
 - 1. For newly acquired government equipment, the PCR will tag the item with an US EPA identification (ID) tag and record detailed equipment information on the PMARS Receiving or Change Data Entry Sheet (see page 12 of the DOI) to include property I.D. number, date received, description, serial number, model number, manufacturer, acquisition cost, contract, work assignment, maintenance, location, ownership and PCR name. **(Note: Government equipment must be designated as CAP or GFP).** The PCR will attach a copy of the RR to the completed Data Entry Sheet and send to the CH2M HILL Property Administrator as soon as possible for posting to PMARS. Tag the equipment in a manner that will not hinder usage of the item but still allows for easy viewing. Try to tag as close as possible to manufacturer's information plate on the equipment.
 - 2. For government equipment that is already tagged and in the CH2M HILL PMARS System, the receiving PCR will record the Property Identification Number, Date Received, Description, New PCR Name, and New Physical Location on the PMARS Receiving or Change Data Entry Sheet and forward with an attached copy of the RR to the Property Administrator as soon as possible for posting to PMARS.
- D. The PCR will maintain a copy of all applicable paperwork including RRs and PMARS Receiving or Change Data Entry Sheets on site for audit purposes.

Section 2: Maintaining Equipment

- A. The assigned PCR is responsible to ensure that equipment in their PCR account is maintained and protected. PCRs must be able to locate equipment in their account within a reasonable time frame.
- B. The PCR will record any changes to the equipment status on a PMARS Receiving or Change Data Entry Sheet and forward to the Property Manager for PMARS posting. Changes include such activities as location change (shipped to a different site), PCR transfer, etc.
- C. The PCR will record any scheduled or unscheduled maintenance activity on a PMARS Receiving or Change Data Entry Sheet and forward to the Property Administrator for PMARS posting.

- D. When government owned equipment is no longer required for use on a contract and determined excess, the PCR will contact the Property Administrator and receive guidance for proper course toward disposition or reutilization of the property.
- E. At the completion or termination of a contract, the PCR will report all government owned equipment to the Property Administrator and receive guidance for the proper course toward disposition or reutilization of the property.
- F. In the event of equipment loss, damage or destruction, the PCR will notify the Property Administrator as soon as possible after discovery of the loss or damage.



Receiving Report (RR) Form

Order # _____ Buyer _____ Date _____
(IE: P.O. #, Expense Report Date, Gov. Doc., etc.) (Purchase Agent, Field Tech #)

Contract # _____ WA # _____ Project # _____

Site Location _____ Vendor Name & Address _____

City _____ State _____ Zip _____

Shipped Via _____ Air Bill/Waybill/B.O.L. # _____

Number of Cartons _____ Condition of Shipment ☐ Good ☐ Fair ☐ Bad ☐ N/A
(Check One)

☐ CAP ☐ GFP

Note: (E)=Estimated or Quoted Cost

Item #	Description	Part #	Property Type	Qty	UOM	Unit Cost	Total Cost

Discrepancies: Overage ☐ Shortage ☐ Damaged ☐ Other _____

Describe discrepancies in detail (list below)

Received By: _____ Employee # _____

PCR: _____ Employee # _____



Consumable Stock Record Log

GOVERNMENT OWNED MATERIAL

Contractor Acquired (CAP)

Office Location _____

Contract # _____		WA # _____	Project # _____
Unit of Meas. _____	Part # _____		
Starting Bal. _____	Start Date _____	Nomenclature _____	
Minimum O/H _____	Maximum O/H _____	Site Location _____	

Note: (E)=Estimated or Quoted cost

[illegible]



Consumable Stock Record Log

GOVERNMENT OWNED MATERIAL

Government Furnished (GFP)

Office Location

Contract # _____		WA# _____	Project # _____
Unit of Meas. _____	Part # _____		
Starting Bal. _____	Start Date _____	Nomenclature _____	
Minimum O/H _____	Maximum O/H _____	Site Location _____	

Note: (E)=Estimated or Quoted cost

[illegible]



Agency _____
 Contract # _____ WA # _____ Project # _____
 Log Start Date _____ Site Location _____

[illegible]



PMARS DATA ENTRY SHEET

NOTE: ALL NEW RECEIPTS MUST HAVE A RECEIVING REPORT ATTACHED

☐ New ☐ Change

PROPERTY IDENTIFICATION NUMBER _____

Date Received _____

Description _____

Serial # _____

Manufacturer _____

Model # _____

Acquisition Cost _____

Year Manufactured _____

Ownership

☐ CH2M Hill

☐ Non Government Client

☐ Government

☐ CAP ☐ GFP

Agency _____

Contract # _____

WA# _____

Project # _____

RR Order # _____

Buyer _____

Maintenance Required: Quarterly ☐ Semi Annually ☐ Annually ☐ Other ☐ No Maintenance Required ☐
(check one)

Physical Location _____

(job address)

Superfund Site Yes ☐ No ☐

PCR Name _____

Employee # _____

Remarks:

FOR PMARS INPUT USE ONLY:

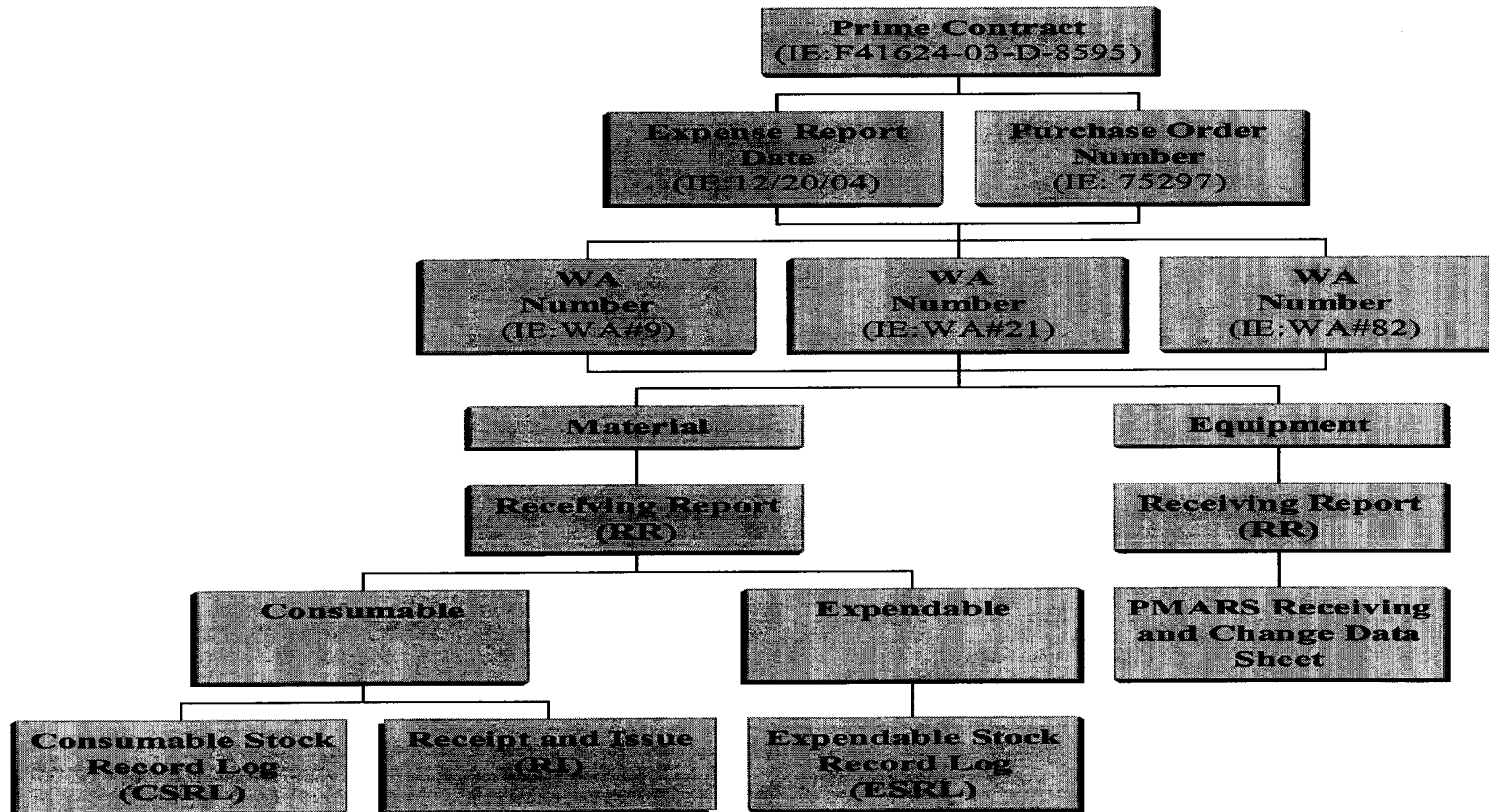
Item Code:

Date input into PMARS

Input by:



Material and Equipment Flow Chart





***Property Control Representative
Assignment and Responsibility
Certificate***

I, _____, agree to the assignments and responsibilities as
the Property Control Representative (PCR) for the CH2M Hill office located in
_____. I further agree to adhere to the instructions and
(office location)
requirements established in the CH2M Hill Government Property Management Manual
and instructions issued from the Corporate Property Manager pertaining to the Firm's
property management policies.

I additionally accept receipt of CH2M Hill owned equipment identification tags

Numbered from _____ to _____

and Government owned equipment identification tags

Numbered from _____ to _____

Agency _____

_____ PCR Employee #	_____ Project Manager
_____ Date	_____ Date
	_____ Corporate Property Manager
	_____ Date

Prime Contract #: _____
Task Order #: _____

Physical Inventory Log

Inventory Date: _____

Line Item	DO #	Prop. Type	Location	Description	Manufacturer	Model #	Gov. Tag #	Serial #	Cond. Code*	Qty	UOM	Unit Cost	Total Cost
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
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28													
29													
30													
31													
32													
33													
34													
35													
36													
37													
38													
39													
40													

Attachment A

Form Examples

SAMPLE

ANYWHERE 7-ELEVEN

222 MONTROSE PKWY

ANYWHERE, CO 88888

303-555-1010

STORE #37

6 EA

<u>Describe Acquisition</u>	→	GROC. @	\$0.99	\$5.94	<i>Ice</i>
		2 EA			
	→	GROC. @	\$1.16	\$2.32	<i>Gal Ziploc bags</i>
		SUBTOTAL		\$8.26	
		TAX @	6.50%	\$0.54	
		TOTAL		\$8.80	
		CASH		\$10.00	
		CHANGE		\$1.20	

THANK YOU

01/19/2005 13:02



EXAMPLE

Consumable Stock Record Log

GOVERNMENT OWNED MATERIAL

Contractor Acquired (CAP)

Office Location DEN

Contract # 68-W6-0036 WA# 110 Project # 187295
Unit of Meas. Bottle Part # _____
Starting Bal. _____ Start Date 01/24/05 Nomenclature Liqui-nox
Minimum O/H _____ Maximum O/H _____ Site Location Someplace City Landfill, Colorado

Note: (E)=Estimated or Quoted cost

Qty O/H	Qty Issued	Issue Date	Emp. # Issued To	Qty Rev'd	Rev'd Date	Expense Report Date or PO#	Unit Cost	Total Cost	Emp. # Posted By	Issued For	Remarks
				4	1/24/05	Inv. #2708797-001	\$9.39	\$37.54	12345		Quart bottles
4	2	3/20/05	02468	← CSRL required when property is issued after the 45 day RI period			\$9.39	\$18.77		40.50	OT-83 SAMPLING
2	2	6/15/05	02468				\$9.39	\$18.77		40.50	OT-83 SAMPLING
0											



EXAMPLE

Receiving Report (RR) Form

PO, PR or Invoice #



Order # Invoice #2708797-001 Buyer K. Buyer/00359 Date 01/24/05
(IE: P.O. #, Expense Report Date, Gov. Doc., etc.) (Purchase Agent, Field Tech #)

Contract # 68-W6-0036 WA# 110 Project # 187295.40.50

Site Location Someplace City Landfill, CO Vendor Name & Address Total Safety, P.O. Box 634133

City Cincinnati State OH Zip 45263-4133

Shipped Via FED EX Air Bill/Waybill/B.O.L. # _____

Number of Cartons 1 Condition of Shipment ☐ Good ☒ Fair ☐ Bad ☐ N/A
(Check One)

☒ CAP ☐ GFP

Note: (E)=Estimated or Quoted Cost

Item #	Description	Part #	Property Type	Qty	UOM	Unit Cost	Total Cost
1	Liqui-nox (qt)		CON	4	Bottle	\$9.39	\$37.54

Discrepancies: Overage ☐ Shortage ☐ Damaged ☐ Other ☒ _____

Describe discrepancies in detail (list below)

Received By: T. Receiver Employee # 02468

PCR: J. Employee Employee # 12345



Remit to: Total Safety, Inc. • P.O. Box 634133 • Cincinnati, OH 45263-4133

For Billing Inquiries Call: (800) 231-6578

TO: CH2M HILL
Someplace City Landfill
12247 Thunderbird Way
Someplace, Co 88888
ATTN: Ken Buyer

SALES INVOICE

Invoice #... 2708797-001
System date... 1/19/05
Date out.... 1/20/05
Invoice date 1/21/05
Job Loc..... 12247 Thunderbird Way
Job No..... 679 CH2M HILL
P.O. #..... 654321
Ordered By.. Ken Buyer
Ship date... 1/21/05
Ship Via.... FEDP1
Terms..... Net 30

Customer #: 19050
CH2M HILL

Qty	Unit	Item number/Description	Unit Price	Amount
4	QT	LIQUI-NOX CONTAINER, LIQUINOX 1-QUART	8.670	34.68
Shipping & Handling				
NFC: 150780292 TT				
FEDP1				
THANK YOU FOR YOUR ORDER. TERRI EXT 4271				
Sub-total:\$				34.68
Tax:\$				2.86
Total:\$				37.54

SAMPLE

The World's Leading Safety Services & Rental Company!

Total Safety serves the oil, gas, chemical, petrochemical, environmental and industrial markets with quality products and value-added services...helping our clients protect assets, property and the environment.

Standard payment terms are:
Net 30 Days from the date of invoice.

Any claim for shortage must be made in writing within 10 days after delivery. Written approval required for returns prior to 30 days from the date of this invoice. There is a restocking charge on all returned items. No material accepted for credit after 30 days.

mp: TNICHOLS

HOU



EXAMPLE

Expendable Stock Record Log

GOVERNMENT OWNED MATERIAL

Contractor Acquired (CAP)

Office Location DEN

Agency US EPA

Contract # 68-W6-0036

WA# 110 Project # 187295

Log Start Date 01/20/05 Site Location Someplace City Landfill, Colorado

Note: (E)=Estimated or Quoted cost

Item #	Part #	Nomenclature	Rev'd Date	PCR #	Unit Cost	Total Cost	Disposition Date	Dispositioned By	Disposition/Remarks
1	598759	Sledge Hammer, 8 lb.	1/19/05	12345	\$27.26	\$27.26			
2	789596	Utility Knife	1/19/05	12345	\$6.02	\$6.02	4/15/05	12345	Fully Expended
3	789596	Utility Knife	1/19/05	12345	\$6.02	\$6.02			
4	896597	Channel Lock Pliers, 8"	1/19/05	12345	\$16.32	\$16.32			



CH2MHILL

EXAMPLE

Receiving Report (RR) Form

Expense Report Actual
or Estimated Date



Order # Exp Rpt 01/26/05-12345 Buyer J. Employee Date 01/19/05
(IE: P.O. #, Expense Report Date, Gov. Doc., etc.) (Purchase Agent, Field Tech #)

Contract # 68-W6-0036 WA# 110 Project # 187295.40.50

Site Location Someplace City Landfill, CO Vendor Name & Address Bucky's Ace Hardware, 5642 Main Street

City Anywhere State CO Zip 88888-8888

Shipped Via Hand Carried Air Bill/Waybill/B.O.L. # _____

Number of Cartons _____ Condition of Shipment ☐ Good ☐ Fair ☐ Bad ☒ N/A
(Check One)

☒ CAP ☐ GFP

Note: (E)=Estimated or Quoted Cost

Item #	Description	Part #	Property Type	Qty	UOM	Unit Cost	Total Cost
1	Sledge Hammer, 8 lb.		EXP	1	Each	\$27.26	\$27.26
2	Utility Knife		EXP	2	Each	\$6.02	\$12.04
3	Channel Lock Pliers, 8"		EXP	1	Pair	\$17.38	\$17.38

Discrepancies: Overage ☐ Shortage ☐ Damaged ☐ Other N/A

Describe discrepancies in detail (list below)

Received By: J. Employee Employee # 12345

PCR: J. Employee Employee # 12345

SAMPLE

BUCKY'S ACE HARDWARE
5642 MAIN STREET
ANYWHERE, CO 88888-8888
(303) 555-9876

NORMAL SALE

598759 SLEDGE HAMMER, 8 LB.

1 @	\$25.60	\$25.60
-----	---------	---------

789596 UTILITY KNIFE

2 @	\$5.65	\$11.30
-----	--------	---------

896759 CHANNEL LOCK PLIERS, 8"

1 @	\$16.32	\$16.32
-----	---------	---------

SUBTOTAL		\$53.22
----------	--	---------

TAX @	6.50%	\$3.46
-------	-------	--------

TOTAL		\$56.68
-------	--	---------

VISA NO: XXXXXXXXXXXXX5454

Exp Date: 09/30/2007

AUTH NO: 147898

CHANGE		\$0.00
--------	--	--------

CUSTOMER'S SIGNATURE

I AGREE TO PAY THE ABOVE TOTAL
AMOUNT ACCORDING TO THE CARD
ISSUER AGREEMENT.

X_____

THANK YOU FOR CHOOSING BUCKY'S
579 16 987 5070 01/19/05 08:42:13



PMARS DATA ENTRY SHEET

NOTE: ALL NEW RECEIPTS MUST HAVE A RECEIVING REPORT ATTACHED

☒ New ☐ Change

PROPERTY IDENTIFICATION NUMBER G500605

Date Received 01/27/05

Description MULTI-METER

Serial # XYZ 4597-057

Manufacturer XYZ Electronic Meter Company

Model # XYZ2893

Acquisition Cost \$339.00

Year Manufactured 2004

Ownership ☐ CH2M Hill
☐ Non Government Client
☒ Government

☒ CAP ☐ GFP

Agency US EPA

Contract # 68-W6-0036

WA# 110

Project # 187295.40.50

RR Order # PO 456789

Buyer J. Employee/12345

Maintenance Required: Quarterly ☐ Semi Annually ☐ Annually ☐ Other ☒ No Maintenance Required ☐
(check one)

Physical Location Field Office at Someplace City Landfill, Colorado
(job address)

Superfund Site Yes ☒ No ☐

PCR Name J. Employee

Employee # 12345

Remarks: Equipment is a Line Item in contract. Calibrate prior to use.

FOR PMARS INPUT USE ONLY:

Item Code:

Date input into PMARS

Input by:



EXAMPLE

Receiving Report (RR) Form

PO, PR or Invoice #



Order # Invoice #205063 Buyer J. Employee Date 01/27/05
(IE: P.O. #, Expense Report Date, Gov. Doc., etc.) (Purchase Agent, Field Tech #)

Contract # 68-W6-0036 WA# 110 Project # 187295.40.50

Site Location Someplace City Landfill, CO Vendor Name & Address XYZ Electronics, 911 Sea View Drive

City San Diego State CA Zip 99999

Shipped Via UPS Ground Air Bill/Waybill/B.O.L. # _____

Number of Cartons 1 Condition of Shipment ☒ Good ☐ Fair ☐ Bad ☐ N/A
(Check One)

☒ CAP ☐ GFP

Note: (E)=Estimated or Quoted Cost

Item #	Description	Part #	Property Type	Qty	UOM	Unit Cost	Total Cost
1	MULTI-METER	XYZ2893-15	Equip	1	Each	\$339.07	\$339.07

Discrepancies: Overage ☐ Shortage ☐ Damaged ☐ Other N/A

Describe discrepancies in detail (list below)

Received By: J. Employee Employee # 12345

PCR: J. Employee Employee # 12345

XYZ Electronics

911 Sea View Drive, San Diego, California
Telephone 619-555-1234 Fax 619-555-6789

Sold to:

CH2M HILL Inc.
12247 Thunderbird Way
Bldg. #244
Somplace AFB, CO 88888
Customer #1259

Date: 01/25/05

Invoice # 205063

PO # 625465

Terms Net 30

Ship Via UPS Ground

Ship to:

SAME

Bill to:

CH2M HILL Inc.
P.O. Box 22508
Denver, CO 80222

Qty	UOM	Stock Number/Description	Unit Price	Amount
1	EA	XYZ2893-15 MULTI-METER	\$257.85	\$257.85
S A M P L E				
Sub-Total				\$257.85
Tax				\$16.76
Shipping & Handling				\$64.46
Total Due				\$339.07

Thank you for your order